Section 6. Transportation Plan Update

The 2030 Transportation Plan is an update to the 2020 plan that was adopted in December 1994. It is intended to serve as a tool for both public and private decisionmakers. It will help public policymakers to make cost effective transportation-related decisions, and will aid business owners and individuals in developing or selecting locations that are suitable for business or residence.

1. Introduction

The update process for this section of the Plan is guided by federal regulations on the development of plans and programs for metropolitan areas, with particular emphasis on public input, preservation of existing transportation facilities, the effect of transportation on land use and development, and fiscal constraints. While this is an update to the 2020 Plan, efforts are focussed not only on the ten-year increment but also on understanding the demographic and spatial changes observed within the past ten years. The 30 percent population increase between 1997 and 2030 considers factors such as the aging of population and realistic estimates of worker migration into the Metropolitan Statistical Area.

Public involvement in the Planning Process: The update process began in 1997 with work sessions of the Metropolitan Area Planning Commission, the designated Metropolitan Planning Organization (MPO) for transportation purposes. Representatives from transportation-related agencies initially identified trends and concerns at the Transportation Stakeholders meeting held in winter 1998. The results from this meeting and 18 other stakeholder meetings from a wide range of topics were then compiled together to identify new issues in the plan update. In the summer of 1998, a citizen survey was conducted to solicit community input regarding future growth, including transportation, priorities for public improvement, quality of life issues, and how to finance growth.

Following technical analysis, including matching future demands with public facilities and improvements, a series of over twenty community meetings were organized in the spring of 1999. These open meetings were held throughout Sedgwick County to explain the differences between alternative growth scenarios. The "trends" scenario reflected a continuation of outward growth expansion and a loss of population in the Center City, whereas the "conservation" scenario identified fiscal savings and strategies to reverse the out-migration trends from the Center City and limited the effect of sprawl. The community meetings were structured to provide breakout sessions of smaller groups in order to hear and respond to the concerns and the priorities of individuals. Similar opportunities for input was also provided to organized neighborhood groups, residents of small cities, and to members of organizations such as the Chamber of Commerce, the Wichita Area Builders Association, and residential and commercial realtors.

Study Methodology: Population and employment trends and projections were obtained from the Wichita State University in 1997. These estimates provided the basis of all technical analysis that followed. A detailed inventory of dwelling units and employment ws conducted with some asssistance from the Kansas Department of Transporta-

tion. All demographic analysis was based on the geographic unit of Traffic Analysis Zones (TAZ), and the street and highway computer network was revised and recalibrated to reflect both transportation improvements and shifts in travel patterns since 1994.

After extensive public input, the MPO and the two governing bodies directed the Planning Department to merge the two scenarios, allowing the existing growth patterns at the fringes of metropolitan area to continue, but also to focus on center city revitalization efforts. Population and employment projections were also updated for the development of this scenario. The Transportation Plan and the travel demand model reflect both these aspects of growth.

2. Transportation System Changes, 1994-1999

The 2020 Transportation Plan recommended over 175 miles of street and highway improvements in addition to bridges over rivers and streams, and railroad tracks. Map 5 reflects approximately 97 miles of street and highway improvements made during the first five years of that Plan, and include projects that are either under construction or are already let for construction.

3. Traffic Problem Areas in 1997

Congestion, as experienced by a vehicle driver, is measured in terms of levels of service. It is the MPO's objective to strive for a desired level-of-service "C" or better for average daily conditions but prefers not to see service levels exceeding "D" during peak travel times. Map 6 identifies those sections on major arterial streets that experienced high traffic demand beyond the desired service levels in 1997, and are consequently identified as areas of congestion.

In addition to the 38 miles of congested streets and highways shown on the map, there are a number of street intersections and railroad grade crossings that exhibit intermittent delays during certain times of the day.

4. Proposed 2030 Transportation Improvements

All alternative transportation scenarios were modeled using year 2030 population and employment assumptions and allocated to 378 Traffic Analysis Zones (TAZ). Over 100 separate incremental scenarios were explored and analyzed to satisfy future traffic demands with acceptable service level expectations. Map 7 illustrates all surface transportation improvements proposed between year 2000 and 2030. Map 11 shows the 2030 Transportation Plan for all arterial streets and highways in Wichita and surrounding areas.

Regional Highways: A Major Investment Study (MIS) that concluded in 1999 recommended preserving the right-of-way corridor for the Northwest Bypass, and to eventually

construct a freeway connecting K-96 to US-54. A Southeast Area Transportation Study, similar to the Northwest Wichita MIS, should be conducted to assess the mobility needs of the southeast quadrant and the region. The study should examine the linkages that are needed between Northeast Wichita and South Wichita and between the small cities south and east of Sedgwick County with the major employment centers in East Wichita. If the study recommendations are to eventually build a bypass/corridor, then it is necessary to protect the right-of-way of these future transportation facilities. A new interchange at I-35 (Turnpike) and Woodlawn/Pawnee is also recommended.

US-54 (Kellogg) from K-96 to the Northwest Bypass should be upgraded to freeway standards with interchanges linking it to the urban arterial street system. Adding two additional ramps should complete the partial interchange at K-96 and Greenwich, and geometric improvements are needed at the interchange of I-135, K-96 and K-254.

Bridges over the Wichita-Valley Center Floodway: A number of scenarios were tested to help reduce traffic congestion and delays over the Floodway. While some of the recommendations of the *Northwest Wichita Traffic Relief Study (MIS)* have been implemented by the City of Wichita, Sedgwick County and KDOT, additional improvements are still necessary. A new 13th Street bridge over the Floodway should be built to reduce future congestion on Zoo Boulevard. It is also recommended that a new West 25th Street Bridge be built over the Floodway linking 25th Street east of I-235 to West 29th and West Streets. However, this improvement is not justified until the later years of this plan.

Three additional improvements to resolve the Floodway crossing issues are (1) widening the West Central Bridge from four to six lanes, (2) improving the Central and I-235 interchange, and (3) improving the US-54 and I-235 system interchange. An interchange at Maple and I-235 was part of the previous 2020 Transportation Plan but is not being proposed in the 2030 update, due to geometric design constraints of the proposed US-54 and I-235 interchange improvements.

Railroad Separations: Ten separate railroad-street grade separations have been identified on Map 7. The four projects that are already under design and scheduled for construction are (1) the Central Rail Corridor (elevated railroad over Douglas, 1st, 2nd, Central, Murdock, 13th and 17th Streets); (2) elevating the Union Pacific (UP) rail line over Pawnee; (3) elevating the Burlington Northern Santa Fe (BNSF) rail line over Pawnee; and (4) elevating the UP rail line over Grand Avenue in Haysville.

A railroad-street separation of E. 21st Street over both the UP and BNSF tracks is being studied presently. All concepts consider elevating 21st Street, but an alternative concept provides an elevated bridge connecting 21st (west of I-135) to 25th Street (west of Broadway). Such an alternative alignment will also eliminate the need to widen 21st Street (west of Broadway) through an ethnically diverse, established neighborhood.

Arterial Street Widening: Over 250 miles of widening projects are recommended. Seven lanes are proposed on certain sections of Rock Road, East Pawnee, East Harry, and

west of the Floodway on West 21st and West Central. The most common improvement in the urban area is widening to four or five lanes. It should be noted that these recommendations are based on projected future traffic volumes, and details such as the length of the fifth lane and other turning lanes should be studied during the design phase of the project, to mitigate the impacts of driveways and commercial entrances on arterial streets.

While a level-of-service rating up to "D" is generally considered acceptable during peak times of the day, an "E" level-of-service has been accepted in this update for specific road segments where additional widening would result in negatively impacting established neighborhoods or downtown businesses. In such cases, it is recommended that alternatives such as consolidation of driveways and reducing the number of existing intersections should be explored, to improve safety, in lieu of continuous street widening.

New Arterial Streets in the Urban Service Area: Paved arterial streets are projected to replace nearly 75 miles of sand/gravel roads over the next 30 years. Traffic projections on these suburban facilities are generally low, justifying the minimum 2 lanes. Additional lanes may be considered during the design phase of these projects when additional information about adjacent land uses will be available.

Protecting Rural Corridors: As cities grow, inter-city traffic between them increases. Some section-line roads will experience higher usage and will consequently attract more businesses and residential uses along these roads. The roads proposed for "corridor protection," as shown on Map 8 shall ensure that the speeds and the traffic-carrying capacity on these key roads are preserved, by limiting the number and the location of intersecting streets and driveways.

Access to properties fronting these key transportation corridors generally can be provided from side streets. If it is necessary that the entrance to properties be facing the identified corridor, then frontage roads may be provided. This recommendation should not affect existing driveways and entrances.

Public Transit Improvements: Transit service in the City of Wichita is provided by Wichita Transit, with fixed-route bus service, and paratransit services for individuals with special mobility needs. The highest ridership level for fixed route service in the last decade was realized in 1995 with 2.3 million rides, but declined to approximately 2 million rides per year and has remained stagnant since then. The ridership loss is a consequence of cuts in frequency and coverage due to dramatic cuts in federal funding in 1996. Over the next 30 years, ridership on the fixed route system is estimated to increase by 30 percent due to the projected aging of the population.

On the other hand, paratransit van service, which is mandated by the Americans with Disabilities Act, has experienced approximately 50 percent increase in ridership in the last 5 years. Although this rate of increase is expected to slow down, demand for paratransit services is estimated to increase by 60% over the next 30 years.

The existing transit system operates as a pulse-transfer operation from the downtown area. As the city has grown, this has created problems with keeping service available at the fringe and maintaining efficient transfer between routes at the downtown Transit Center.

In order to address these problems, several measures are being considered to improve the transit service (as shown on Map 9). The first is to cut back the radial-pulse system to the central (base) area of Wichita. This would make the pulse at the Transit Center more manageable and provide better frequency headways in the core area.

The second measure is to create 7 connector/circulator routes to serve the fringe areas. This would provide more neighborhood type service to each of the fringe areas, provide connection to the main pulse system, and at the points where they connect to the main pulse system provide connection to other adjacent connector/circulator routes. One connector/circulator route has already been set up and is being monitored as a first step in implementing this type of system.

A third measure is to set up Park and Ride locations. These would provide express service to downtown and other employment centers. They would also offer opportunities for small city and rural area transit services in the region to connect with the Wichita Transit system.

Two other measures are under consideration to address problems with the existing system. First is a cross-town shuttle, that would provide more direct service to each end of the central area and allow more effective cross-town connection between some of the connector/circulator routes. The second is a downtown shuttle that would connect downtown destinations with the Transit Center.

A Transit Development Program will be developed in 2000 to refine these system concepts and more precisely evaluate the cost and effectiveness of this proposal.

5. Residual Traffic Problem Areas in 2030

The proposed transportation improvements greatly improve the level of service on the existing system and provide mobility linkages to the planned urban service areas. While Map 7 illustrates all planned improvements on the transportation system by 2030, some congestion problems are left unresolved, as illustrated on Map 10.

These 36-mile segments of residual congestion are for information only. Nearly 15 miles of “mild” congestion can be anticipated on the freeway system, whereas the 21 miles of city arterial streets will experience some levels of intermittent peak-hour congestion. These segments are not recommended for further widening because of the costs and severe negative impacts that would result on adjacent land uses. Alternatively, capacity-

preserving techniques such as access management on arterials and Intelligent Transportation Systems (ITS) on freeways could be implemented where feasible.

6. Financing the Transportation Plan

Federal planning guidelines require the Transportation Plan to be financially constrained. While there are many sources of funds available from different transportation programs, assumptions are made to reflect the continuation of those funding programs.

Street and Highway Improvements: The metropolitan area is estimated to have available over $2.1 billion for the street and highway program. Table 2 identifies Federal, State and Local funding sources. Over 32 percent will be available from ongoing federal and state programs. These funds will be used to implement the 2030 transportation improvements as shown on Map 7. Table 3 shows the expenditures of the City of Wichita's Road and Bridge Program, whereas Table 4 shows estimates of Sedgwick County's transportation related expenditures. The surplus/deficit shown in these tables is not considered significant, as these cost estimates are within the range for average contingency costs. Some projects may also be funded jointly by Wichita and Sedgwick County.

Table 5 shows KDOT projets that are either on the statewide transportation system, proposed to be added to the statewide system, or are locally initiated projects with partial state funding.

Table 6 shows that additional funding sources for railroad-street separation projects must be explored to implement all identified proposed projects.

***Table 2* - Projected Available Funds (2000 to 2030)**
For Street and Highway Construction (in 1999 Dollars)

Funding Source	Wichita	Sedgwick County	Total
Federal			
Surface Transportation Program	$168,904,000	$63,598,000	$232,502,000
Bridge Replacement	$4,969,4000	$26,139,000	$75,833,000
Congestion Mitigation & Air Quality	$77,184,000		$77,184,000
Sub-Total for Federal Sources	$295,782,000	$89,737,000	$385,519,000
State			
System Enhancement			$300,000,000
Local			
Sales Tax	$661,790,360	$398,508,045	$1,060,298,405
Property Tax	$269,074,750	$106,152,000	$375,226,750
Sub-Total for Local Sources	$930,865,110	$504,660,045	$1,435,525,155
TOTAL	**$1,226,647,110**	**$594,397,045**	**$2,121,044,155**

Table 3 - Wichita Road and Bridge Project Costs (2000 to 2030)

Projects	Estimated Cost(1999 $)
Freeways/ Expressways/ Interchanges	
Kellogg: Edgemoor to K-96	$174,835,000
Kellogg: Mid-Continent to Northwest Bypass	153,050,000
Northwest Bypass	33,750,000
Southeast Bypass	37,500,000
Bridges/Overpasses	
13th Street Bridge over Floodway/I-235 (City Share 25%)	5,000,000
25/29th Street Bridge over Floodway (City Share 50%)	9,000,000
Arterial Road Widening (includes 3, 4, 5, 6 & 7-lane road improvements)	360,576,000
New Arterial	48,160,000
Arterial Bridges	135,000,00
Arterial Intersections/Widening	63,000,000
Road Reconstruction	76,245,000
TOTAL COST	$1,096,116,000
TOTAL FUNDING	$1,226,647,110
DIFFERENCE	$130,531,110

Table 4 - Sedgwick County Road and Bridge Project Costs (2000 to 2030)

Projects	Estimated Costs (1999 $)
Freeways/Expressways/Interchanges	
Kellogg Intersection Improvements	$30,000,000
Northwest Bypass	33,750,000
Southeast Bypass	37,500,000
Bridges/Overpasses	
13th Street Bridge over Floodway/I-235 (County Share 25%)	5,000,000
Arterial Roads	95,552,000
Bridges	62,000,000
New Arterials	48,160,000
Arterial Intersections	5,000,000
Road Reconstruction	206,000,000
TOTAL COST	522,962,000
TOTAL FUNDING	594,397,045
DIFFERENCE	$71,435,045

Table 5 - KDOT Road and Bridge Project Costs (2000 to 2030)

New Projects	Estimated Costs(1999 $)
Freeways/Expressways	
Kellogg – Edgemoor to K-96	$140,165,000
Kellogg – Mid-Continent to NW Bypass	61,525,000
Northwest Bypass	67,500,000
Southeast Bypass	75,000,000
Bridges/Overpasses	
13th Street Bridge over Floodway/I-235 (State Share 25%)	10,000,000
25/29th Street Bridge over Floodway (State Share 50%)	9,000,000
Interchanges	
Central/I-235	18,000,000
I-135/I-235/K-254	73,000,000
I-235/US 54	110,000,000
Sub-Total New Project Cost	$362,500,000
Projects in Existing TIP	$116,134,000
TOTAL COST	$680,324,,000

Projects and estimated costs listed in Table 5 are based on assumptions made by the MPO, and are not committed or approved by KDOT.

Table 6 - Wichita & Sedgwick County Railroad Separation Projects Cost and Available Funding (2000 to 2030)

Projects	Estimated Costs (1999 $)
City CIP Projects	
Pawnee/ UP	$6,680,000
Pawnee/ BNSF	$13,830,000
Central Rail Corridor underpass/ UP & BNSF	$64,480,000
Subtotal	$84,990,000
County CIP Project	
Seneca & Grand in Haysville	$11,300,000
Other Projects	
21st Street N. overpass/ UP & BNSF	$25,000,000
Harry/UP & BNSF	$23,000,000
47th Street S. underpass/ UP	$13,000,000
47th Street S./ BNSF	$9,000,000
63rd Street S. underpass/ BNSF	$10,000,000
Subtotal	$80,000,000
Total Cost	$176,290,000
Funding Sources	**Funds Available**
Union Pacific	$16,000,000
TEA-21 Rail Separations	$25,000,000
State Comprehensive Transportation Program	$50,000,000
Total Funds Available	$91,000,000
DIFFERENCE	$(85,290,000)

Public Transportation

CAPITAL PROJECTS

Expenditures

Bus & Van Replacement & Expansion	$75,992,848
Equipment & Facilities	$18,855,440
Maintenance Under Capital	$42,511,090
Planning, Admin. & ADA allowed under Capital	$44,345,548
Total Capital Expenditures	$181,704,926

Revenues

Fed allocation - Formula (5307)	$109,813,488
Fed allocation - Discretionary (5309)	$34,936,852
KS Comp. Transportation. Prog. - Funding for Capital	$20,200,760
Local	$12,423,887
Total Capital Revenues	$177,374,987
Total Surplus /Deficit	($4,329,939)

Capital Project Expenditure Assumptions:
Bus replacement and expansion assumes a 12-year replacement cycle. Van Replacement and expansion, equipment, facilities, and planning and administration assume an average of the 1999-2004 expenditures. Additional vans will be purchased after 2009 and replaced every three years. Maintenance under capital assumes a projection of the 2004 budgeted level through 2030. ADA expenses allowed under capital assume an 8% increase per year through 2030.

Capital Project Revenue Assumptions:
Funding levels from federal allocation formula (Section 5307) and the Kansas Comprehensive Transportation Program continue through the year 2030. Federal allocation discretionary funding will be available to expand the fleet and to replace transit coaches every 12 years. The 20 percent local share required to match federal funds will continue to be available from state funding sources.

OPERATING BUDGET

Expenditures

Existing Service	
Personnel	$104,476,532
Contract & Admin Services	$28,216,561
Materials & Supplies	$19,960,300
Debt Service & Interfund Transfers	$10,370,320
Subtotal of Existing Service Expenditures	$163,023,713
Major System Redesign and Expansion	$69,584,160
State Funded Service Expansion	$20,249,030
Total Operating Expenditures	$252,856,903

Revenues

Existing Service	
Fares	$58,644,712
General fund	$146,203,489
Rentals, Advertising, Reimbursements, Interest, Cash	$2,167,642
Subtotal of Existing Service Revenues	$193,099,011
KS Comp. Transp. Prog. Funds for Expansion/ Operating Exp	$16,013,440
Total Operating Revenues	$223,029,283
Total Surplus /Deficit	($29,827,620)

Operating Expenditure Assumptions:
All expenditures for the first five years (2000-2004) are based upon City of Wichita budgets. All expenditures after 2004 are projected from 2004 levels except for expansions. System expansions are based upon estimated hourly cost of service in the year 2000 and projected out to 2030.

Operating Revenue Assumptions:
Funding for the first five years (2000-2004) is based upon City of Wichita budgets. All funding, except fares and general fund, are projected from 2004 levels through 2030. Fare revenues are based upon two components; current service is projected using 2004 budget levels, and fares from service expansion are estimated as 20% of the cost of the expanded service. General fund revenues are derived from a 2-mil property tax. Increases in the valuation of property will generate additional revenues for the general fund.

While the financial tables above show a funding deficit in both Capital and Operating Budgets of Wichita Transit, the amounts are not considered significant over a period of 30 years. It is also realistic to assume that federal and state funding levels for public transportation will increase as a result of an increase in the aging population.